Dec. 30, 1941. C. LOVELACE 2,268,292

METAL-DRESSING TOOL

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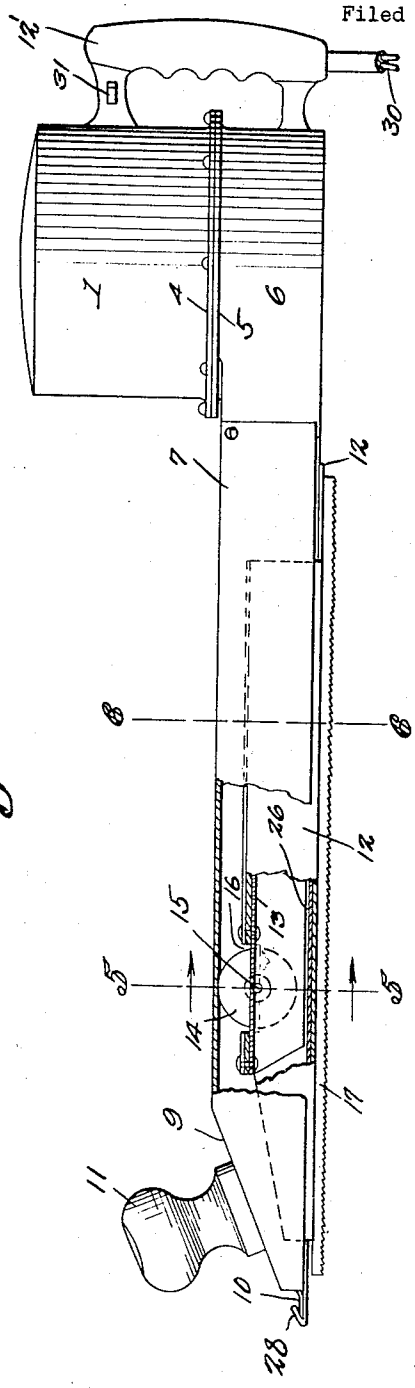


Fig. 1.

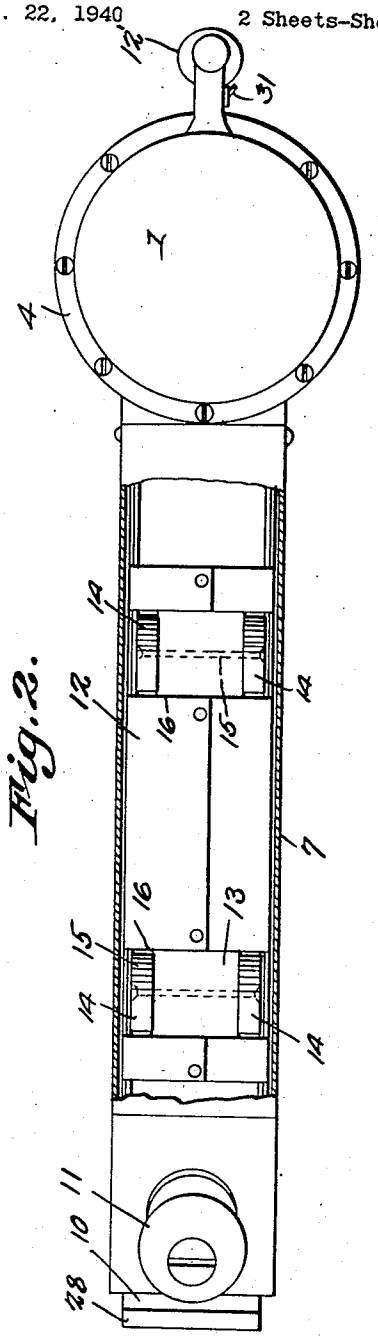


Fig. 2.

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Fig. 4.

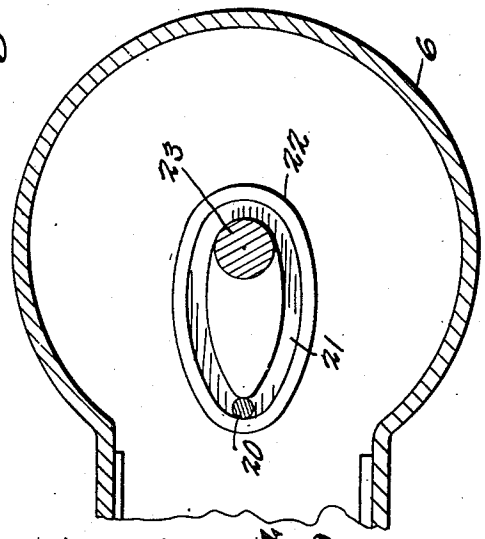


Fig. 6.

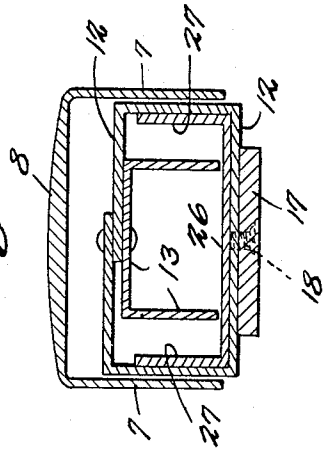


Fig. 3.

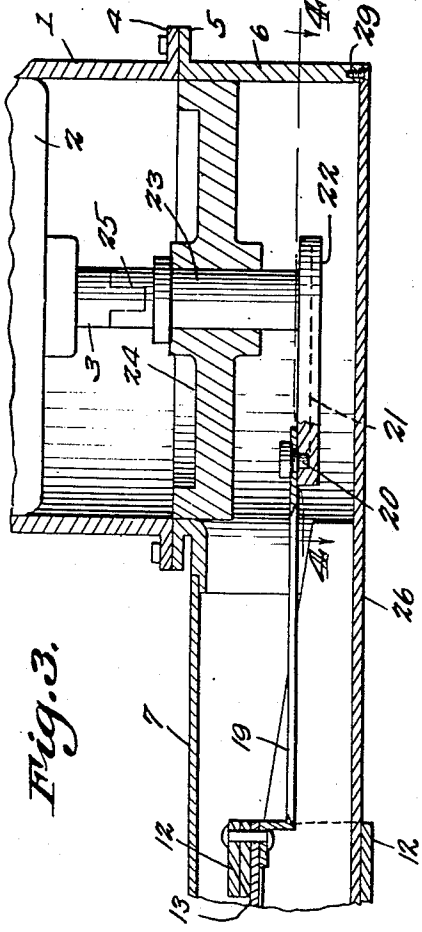
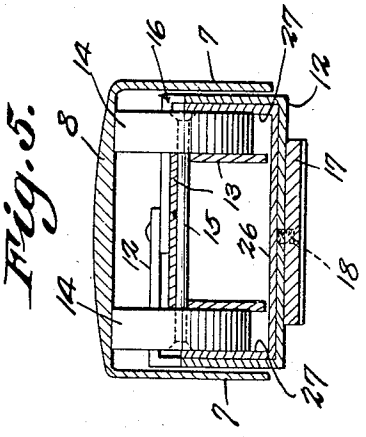


Fig. 5.



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METAL-DRESSING TOOL

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Application August 22, 1940, Serial No. 353,758

7 Claims. (Cl. 29—76)

This invention relates to a tool for dressing metal surfaces and it is more especially useful in smoothing metal structures, such as automobile fenders, after the same have been repaired.

An object of the invention is to provide a tool utilizing a motor-actuated file adapted to be reciprocated while in engagement with the surface under treatment, the tool being so constructed as to be easily handled and to operate smoothly and at high speed.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claims, it being understood that changes may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings—

Figure 1 is a side elevation of the tool, a portion being broken away.

Figure 2 is a top plan view, a portion being broken away.

Figure 3 is an enlarged central vertical longitudinal section through one end portion of the tool and showing a portion of the motor.

Figure 4 is a section on line 4—4, Figure 3.

Figure 5 is an enlarged section on line 5—5, Figure 1, showing the anti-friction wheels in elevation, remote parts being removed.

Figure 6 is a section on line 6—6, Figure 1, said section being on an enlarged scale and remote parts being removed.

Referring to the figures by characters of reference, 1 designates the housing of an electric motor a part of which has been shown at 2, the shaft 3 of the motor being extended downwardly. The bottom of the housing 1 has an annular flange 4 which is bolted or otherwise suitably secured to a flange 5 extending around the upper open end of a substantially cylindrical base 6. Extending radially from this base and opening thereinto is an elongated housing 7 open at the bottom and preferably provided with a rounded top 8. That end of the housing remote from the base 6 has its top inclined as at 9 and from this end of the housing is extended a lip 10. If desired a handle or knob 11 can be mounted on the inclined portion 9 of the top and another handle or grip 12' can be connected to the housing 1 and the base 6.

Mounted for reciprocation within the housing 7 is a carriage in the form of an elongated rectangular tube 12 to the top of which is riveted or otherwise fastened an inverted channel strip 13 the sides of which are spaced inwardly from the sides of the tube 12 a sufficient distance to receive between them spaced pairs of anti-friction wheels 14. The wheels of each pair are mounted on a transverse axle 15 the ends of which are preferably flush with the outer sides of the engaged wheels and this axle is supported by the sides of the channel strip 13.

The wheels 14 project upwardly through slots 16 in the top of the carriage so that the upper portions of the wheels can engage and roll along the bottom surface of the top of housing 7.

To the bottom of the tubular member 12 of the carriage is secured a file 17 the active surface of which is suitable for the work to be performed. This file is attached to the carriage in any suitable manner, as by means of screws 18 having their heads fitted in countersinks in the file or any other desired means could be employed. It is merely necessary that the file be so connected to the carriage as to move therewith and to remain connected thereto while being subjected to the strains set up by a filing operation.

An arm 19 is fixedly secured to one end of the carriage and is extended therefrom into the base 6. It has a depending stud 20 or the like which is seated in an eccentric groove 21 formed within an eccentric 22 secured to a shaft 23 which is journalled within a spider 24 or the like fastened in the upper end of the base 6. This shaft 23 is coupled to the shaft 3 in any suitable manner, as by providing the shaft with interfitting ends indicated at 25 so that when the motor is operated the eccentric 22 will be rotated and the arm 19 and the carriage connected thereto will be reciprocated longitudinally of and within the housing 7.

For the purpose of holding the parts assembled there is provided an elongated bottom plate 26 having upturned stiffening flanges 27 at the sides thereof. This plate is insertable through the carriage between the bottom of the tubular member 12 and the lower edges of the channel member 13. One end of the bottom plate has a backturned portion or hook 28 which engages the lip 10 while the other end of the bottom plate is shaped to close and fit against the bottom of the wall of base 6 to which it can be attached by bolts 29 or the like. It is to be understood, of course, that the upturned sides 27 are spaced apart a distance sufficient to provide

guides for the inner surfaces of the sides of tubular member 12 as shown particularly in Figure 6.

A cord leading to the motor 2 has been indicated at 30 and the flow of current to the motor can be controlled by a suitably located switch such as indicated for example at 31. When it is desired to use the tool the same is placed in position with the abrasive face of the file in contact with the surface to be dressed. The operator grips the two handles 11 and 12' and throws the switch. When the motor is energized it causes the eccentric to rotate at a high speed and this, in turn, sets up a rapid reciprocation of the carriage so that the wheels 14 will travel back and forth on the undersurface of the top of housing 7 which thus forms a track. With a tool of this type a surface can be quickly dressed with minimum exertion on the part of the user, it being understood that the pressure is applied by the operator pushing against the handles 11 and 12.

Obviously other tools to be operated by reciprocating them could be substituted for the file. For example any suitable means could be used for connecting a saw blade to the bottom of the carriage so that it would extend longitudinally thereof and reciprocate therewith in the same manner as the file.

The entire device is very simple and compact in construction, can be constructed at low cost, and is especially advantageous because of its ease of operation and the fact that it will not readily get out of order.

What is claimed is:

1. A tool of the class described including a motor housing having a base, an elongated housing extending from the base and open at the bottom, a removable bottom plate spaced from the sides of the housing and detachably joined at its respective ends to the base and to one end of the elongated housing, a carriage embracing the bottom plate for attachment to a work-engaging element and mounted for reciprocation in the elongated housing, means in the carriage and cooperating with the base for guiding the carriage in the elongated housing, and anti-friction wheels mounted on the carriage and positioned for rolling engagement with the undersurface of the top of the elongated housing.

2. A tool of the class described including an elongated housing, a bottom plate detachably secured at one end to one end of the housing, a motor housing having a base at the other end of the elongated housing, means for detachably securing the bottom strip to said base, a carriage extending around the bottom plate and mounted for reciprocation within the elongated housing, said carriage having a bottom surface exposed outside of the housing and beneath the bottom plate for attachment to and reciprocation with a work engaging element, means in the carriage and cooperating with the bottom plate for holding the carriage properly supported within the elongated housing, anti-friction wheels mounted on the carriage and positioned for rolling engagement with the bottom surface of the top of the elongated housing, and means for reciprocating the carriage, said means being positioned within the motor housing and its base.

3. A tool of the class described including a motor housing having a base, a motor therein, an elongated housing extended from the base and open at the bottom, a bottom strip detachably connected at one end to the base and at its other end to one end of the elongated housing, a carriage mounted for reciprocation within the elongated housing and extending around the base, said carriage having its bottom portion exposed under the base for attachment to a work-engaging element, means within the carriage and cooperating with the base for supporting the carriage in the elongated housing, anti-friction wheels carried by the carriage and mounted for rolling contact with the lower surface of the top of the elongated housing, and a driving connection between the motor and the carriage, said connection being positioned in the base and the elongated housing.

4. A tool of the class described including a motor housing having a base, a motor therein, an elongated housing extended from the base and open at the bottom, a bottom strip detachably connected at one end to the base and at its other end to one end of the elongated housing, a carriage mounted for reciprocation within the elongated housing and extending around the base, said carriage having its bottom portion exposed under the base for attachment to a work-engaging element, means within the carriage and cooperating with the base for supporting the carriage in the elongated housing, anti-friction wheels carried by the carriage and mounted for rolling contact with the lower surface of the top of the elongated housing, a driving connection between the motor and the carriage, said connection being positioned in the base and the elongated housing, and a pressure-receiving handle connected to each end of the tool.

5. A tool of the class described including an elongated housing, a housed operating motor joined to one end of the housing, a bottom strip extending longitudinally of the housing and detachably mounted, a carriage within the housing and extending around the bottom strip, said carriage having a bottom portion exposed outside of the housing for attachment to a work-engaging element, means in the carriage and cooperating with the bottom strip for supporting the carriage in the housing, and anti-friction wheels mounted on the carriage and positioned for rolling contact with the inner surface at the top of the housing.

6. A tool of the class described including an elongated housing, a housed motor joined to one end thereof, a lip projecting from the other end thereof, a bottom plate detachably engaging the lip and extending longitudinally of the housing, means for securing said plate against movement at that end remote from the lip, an elongated angular tubular member within the housing and extending under and around the bottom plate to provide an exposed surface for attachment to a work-engaging element, a channelled member secured to and within the tubular member and cooperating therewith to provide a carriage, said channel member cooperating with the bottom plate to support the carriage within the housing, and wheels journalled in the carriage and having rolling contact with the inner surface of the top of the housing.

7. A tool of the class described including a base, an elongated housing extending from the base and open at the bottom, a bottom strip connected at one end to the base and at its other end to one end of the housing, said bottom strip being spaced along its sides from the sides of the housing, a tubular carriage extending around

and slidable on the bottom strip and within the housing, the side portions of the carriage being positioned within the spaces between the sides of the housing and the sides of the bottom strip, means within the carriage and cooperating with the bottom strip for limiting the downward movement of the carriage relative to said strip and the housing, anti-friction wheels mounted within the carriage and projecting upwardly therefrom for rolling engagement with the top portion of the housing, and means within the base for reciprocating the carriage along the bottom strip and within said side spaces, the bottom surface of the carriage being exposed for attachment to a work-engaging element.

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